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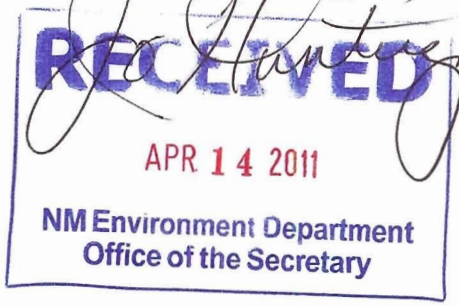

April 12, 2011

David Martin
Environment Secretary
New Mexico Environment Department
1190 St. Francis Drive
PO Box 5469
Santa Fe, NM 87502-5469

RE: Final Recommendations of the Liquid Waste Training and Certification Task Force

Dear Mr. Secretary:

The Liquid Waste Training and Certification Task Force was appointed by Secretary Curry to assist NMED in producing a certification program to meet the requirements of Section 904 of the liquid waste regulations. The task force was charged with the following three tasks: identifying the workforce classifications for which certification is needed; make recommendations on the Knowledge, Skills and Abilities (KSA's) that are needed for each classification and Specific education and training curricula that would provide the KSA's. We offer you the following recommendations along with a brief overview of the process that was used by the task force to come to these recommendations.

Task Force Meeting Dates and Attendees

The meeting dates and individuals attending the meetings are given below

Meeting Date	Attendees
July 23, 2010	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Jace Ensor, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Clement Austin*, Tom Brandt
August 8, 2010	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Clement Austin*, Tom Brandt
August 26, 2010	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Adrian Hanson, Ralph Baker-Dotson, Bruce Lesikar, Tom Brandt
October 22, 2010	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Tom Brandt

December 16, 2010	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Tom Brandt
February 4, 2011	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Tom Brandt
February 24, 2011	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Adrian Hanson, Ralph Baker-Dotson, Bruce Lesikar, Tom Brandt
March 18, 2011	Gene Bassett, James Vincent, Don Becker, Chris Gonzales, Bill Cambell, Adrian Hanson, Ralph Baker-Dotson, Tom Brandt
April 1, 2011	Gene Bassett, James Vincent, Chris Gonzales, Bill Cambell, Adrian Hanson, Don Becker, Ralph Baker-Dotson

*Jace Ensors proxy for the times when he could not be at the meetings.

KSA Development

The KSA inventory was developed using a comprehensive textbook Table of Contents as a starting point. This information was then cross-checked with other texts if available, and then fine tuned based on the experience base provided by the NM installers on the task force; Eugene Bassett, Don Becker, and Ralph Baker. Although Ralph Baker was not a member of the Task Force he attended all of the meetings and provided valuable insight and contributed greatly. This inventory was then used as a tool for understanding the courses that would have to be provided to train the State workforce. Based on the KSA and input from outside expertise, it was quickly obvious that there were competing objectives in a well thought out training program. Unlike a University with an ever changing population of students, the work force in New Mexico is relatively stable. This changes the implementation strategy and the economics of the training. The Task Force quickly realized that we need a strong fundamental course that should be required of everyone, and then specialty courses that will have smaller audiences. Because the dominant need is the Installer I certification, it is estimated that the bulk of the training would occur during the first 3 years and then a low level maintenance program would be put into place. Assuming we have 450 installers and 100 NMED employees, training 200 professionals a year would take care of the bulk of the training.

A suggested training scenario might be teaching 4 classes/year of 50 students/class in different areas of the State for 3 years. After the first 3 years,

only new people in the industry would be taking the fundamentals course. Then the course offering can be reduced to one class every year or two. This time line makes it very clear that writing complete custom training materials will not be wise use of limited resources. It is necessary to write a few specialty modules dealing with "one call" and State Regulations, but this is a very limited investment. It also suggests that the State of NM should not consider investing in a "Training Center". Because the recommended curriculums are based on national textbooks, if someone needs a class out of cycle, the individual can attend a class in another State (TX., AZ., UT....) and transfer the training to New Mexico for certification. This provides a minimum cost to every party involved.

As mentioned above, developing a textbook is prohibitively expensive, so only published, nationally available resources were considered. The following table lists resources available from the most active advocates of training on a National level.

Nationally Available Textbooks that were considered

CIDWT	NOWRA	NAWT
Installation of Wastewater Treatment Systems	No text available, but teach a national A-Z of Onsite Wastewater - Class Focus on fundamentals	Installation of Onsite Wastewater Treatment Systems
Analyzing Wastewater Treatment Systems – high strength waste and hydraulic loading class. Mostly for commercial/industrial		Onsite Wastewater Property Transfer Inspection
Residential Onsite Wastewater Treatment System: An Operation and Maintenance Service Provider Program		Pumper Certification Text
		Publish National Exams for Installer, Property Transfer Inspector, and

		Waste Pumper and Hauler
		NAWT has a national Class on handling and treatment of septage at the National Transporters Symposium in William Hupchuck

CIDWT = Consortium of Institutes for Decentralized Wastewater Treatment
NOWRA = National Onsite Wastewater Recycling Association
NAWT = National Association Wastewater Transporters

CIDWT and NAWT both publish acceptable textbooks. Where there is overlap, the CIDWT texts tend to be much more comprehensive then the NAWT texts. Although NOWRA offers classes and would be an acceptable training provider, they do not currently publish a textbook. NOWRA would either have to produce their own textbook, or select one of the available text book to use with their curriculum.

Recommendations from National Experts who worked with the Task Force
Professor Adrian Hanson and Professor Bruce Lesikar taught four onsite wastewater classes in NM during the period over which this task force was active. While he was in town for the courses he agreed to meet with the Task Force. Dr. Lesikar was with Texas A&M AgriLife. He designed and built all five training centers in TX and managed the State training program from inception until October 2010. The task force and members of NMED were invited to attend the classes taught by Hanson and Lesikar as an example of the level of training available off the shelf with minimal development investment. These classes were targeted at a Native American audience and were not necessarily appropriate for the State of NM. However, with minor fine-tuning they would work well for NM's needs. More importantly, they provided the Task Force with insight into the structure and content of what was available. The Native American classes were paid for by EPA and were taught to the Native American Wastewater Managers and Operators from Tribes in NM. Dr. Lesikar met with the Task Force after both classes and provided insight into developing training programs. A subset of the Task Force also met with Dr. Dave Guftason and Dr. James Anderson. These men are national experts who work with the State of Minnesota providing training for their certification program.

Summary of the main recommendations from these National Trainers:

- No Training Center
- Bulk of training will be done in three years, which will impacts revenue stream
- Minimize local production of training materials
- Open options up as much as practical

The attached report contains the KSAs for each of the certification categories, the training and education classes required for each category and suggested textbooks that could be used for each class. We have also attached some typical curriculum that could be used for some of the certification categories.

Please let me know if you have any questions or if you would like any additional information.

Sincerely,

Eugene C. Bassett

Mr. Gene Bassett
Task Force Chairman

Liquid Waste Training and Certification Task Force

Categories of Certification and Required Knowledge, Skills and Abilities

Knowledge Skills and Abilities	Installer 1	Installer 2	Site Evaluator	LW System Designer	WW Re-use Irrigator	Third Party Inspector	Maintenance Svc Provider	NMED Employee
Must hold valid and appropriate class of contractor's license by CID	X	X			X		X	
Knowledge of CID regulations and the limitations of their licensure or certification	X	X	X	X	X	X	X	X
Knowledge of the Liquid Waste Regulations	X	X	X	X	X	X	X	X
Ability to thoroughly and effectively review /submit liquid waste permit applications for compliance with liquid waste regulations	X	X		X		X		X
Knowledge of OSHA safety regulations regarding trench safety	X	X	X	X	X	X	X	X
Knowledge of health and safety standards when working with liquid waste: personal hygiene, pathogens, lifting and carrying injuries, hazardous gases, confined space hazards, electrical hazards, open excavations, risers and access openings, insect and snake bites, poisonous vegetation and dogs	X	X	X	X	X	X	X	X
Knowledge and ability to install conventional treatment systems and holding tanks	X	X		X	X	X		X
Knowledge of how to excavate to the proper depth	X	X		X	X	X		X
Knowledge of materials, their proper use and installation	X	X		X	X	X	X	X
Knowledge of pipe marking, identification and color codes	X	X	X	X	X	X	X	X
Knowledge of classification of soil types	X	X	X	X	X	X	X	X
Knowledge of soil geology and soil morphology and landscape positioning	X	X	X	X	X	X	X	X
The ability to determine the difference between clays, coarse sands and other soil types	X	X	X	X	X	X	X	X
The ability to determine the depth to the seasonal high water table	X	X	X	X	X	X	X	X
Knowledge of fluid dynamics related to drainage and geographic slopes	X	X	X	X	X	X	X	X
Knowledge of the concepts of evapotranspiration	X	X	X	X	X	X	X	X
Knowledge of the impacts of vegetation on liquid waste systems	X	X	X	X	X	X	X	X
Knowledge of the design of liquid waste systems	X	X	X	X	X	X	X	X
Knowledge of water movements through a soil treatment area	X	X	X	X	X	X	X	X
Knowledge of the development and functioning of a biomat in soil treatment areas	X	X	X	X	X	X	X	X
Knowledge of the differences between different pipe materials and their intended use	X	X		X	X	X	X	X
Knowledge and ability to properly size and install a pump (for demand-dosed systems)	X	X		X	X	X	X	X
Knowledge of the UPC and NM Plumbing and Mechanical Regulations	X	X		X	X		X	X
Ability to operate a backhoe	X	X						
Ability to properly size a soil treatment area/ disposal area	X	X	X	X	X	X	X	X
Ability to properly size a septic tank	X	X		X	X	X	X	X
Ability to operate a transit	X	X		X	X	X	X	X
Ability to properly connect pipe and fittings	X	X			X		X	
Knowledge of the functioning of all types of liquid waste systems		X	X	X	X		X	X
Knowledge and ability to design and install all types of liquid waste systems		X		X	X		X	X
Knowledge of dosing systems and controls		X		X	X		X	X
Knowledge of the basic types of advanced treatment systems including fixed-file, suspended growth and activated sludge		X		X	X		X	X
Knowledge and ability to install pump stations (time-dosed)		X		X	X		X	X
Knowledge and ability to install all types of alternative disposal systems including but not limited to evapotranspiration systems, Wisconsin mounds, elevated beds, cluster systems, subsurface irrigation and greywater systems		X		X	X			X
Knowledge of legal descriptions, easements, encroachments and lot size determinations	X	X	X	X	X		X	X
Ability to read plat maps and GPS units	X	X	X	X	X		X	X
Ability to use the instruments that measure the following parameters: DO, pH, temperature, salinity, electrodconductivity, total dissolved solids, depth of sludge and scum,.							X	X
Ability to use a microscope and Imhoff cone							X	
Ability to perform troubleshooting using troubleshooting tools							X	
Ability to use maintenance forms and checklists for advanced treatment units							X	
Ability to understand and work on control panels within the limits of your licensure		X			X		X	
Knowledge and ability of proper sampling techniques and chain of custody procedures							X	
Knowledge of basic plumbing methods and electrical requirements	X	X			X		X	X
Ability to conduct comprehensive inspections on all types of liquid waste systems							X	X

Liquid Waste Training and Certification Task Force

Training and Education Classes Required for each Category of Certification

Certification Category	Training Format
Installer 1	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations- Basic (4 hours)
Installer 2	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations – Basic (4 hours) Installer 2 (2 days) Liquid Waste Regulations – ATS and ADS (4 hours)
Site Evaluator	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations- Basic (4 hours)
LW System Designer	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations- Basic (4 hours) Installer 2 (2 days) Liquid Waste Regulations – ATS and ADS (4 hours)
WW Re-Use Irrigator	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations- Basic (4 hours) Installer 2 (2 days) Liquid Waste Regulations – ATS and ADS (4 hours)
Third Party Inspector	Installer 1 (2 days) NAWT class (2 days) Liquid Waste Regulations- Basic (4 hours) Liquid Waste Regulations- Third Party Inspectors (4 hours)
Maintenance Service Provider	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations – Basic (4 hours) Installer 2 (2 days) Liquid Waste Regulations – ATS and ADS (4 hours) Maintenance Service Provider (2 days)
NMED Employee	Installer 1 (2 days) Site and Soil Evaluation (2 days) Liquid Waste Regulations – Basic (4 hours) Installer 2 (2 days) Liquid Waste Regulations – ATS and ADS (4 hours) Liquid Waste Regulations- Third Party Inspectors (4 hours) *The NMED employee should be trained in the level of system that they are reviewing and inspecting. The NMED employee should be mentored until they have the knowledge and experience to review and inspect all types of liquid waste systems. They should not be reviewing or inspecting types of systems for which they have not received training and mentoring.*

NOTE: The professional in each category would have 3 years to complete their certification training and in some cases they may have up to 5 years to complete their required training

All training and course materials shall be based upon nationally recognized curriculum which is approved by the department. This shall including but not be limited to the following: Consortium of Institutes for Decentralized Wastewater Treatment: Installation of Wastewater Treatment Systems; Consortium of Institutes for Decentralized Wastewater Treatment: Residential Onsite Wastewater Treatment Systems: An Operation and Maintenance Service Provider Program; and Consortium of Institutes for Decentralized Wastewater Treatment: Analyzing Wastewater Treatment Systems- Serving Residential and Commercial Facilities for High Strength and Hydraulic Loading; NAWT: Introduction to Proper Onsite Wastewater Treatment System Practices; and NAWT: Inspection Manual for Onsite Wastewater Treatment Systems.